Mr. McCrory.

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS
DIVISION OF AGRICULTURAL ENGINEERING

S. H. McCrory, Chief

M O N T H L Y N E W S L E T T E R

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DRAINAGE

On October 20, Mr. McCrory began an inspection trip, one object of which was to familiarize himself with present conditions in the Rio Grande country. Enroute he spent a day with Mr. Ramser at Cape Girardeau, Missouri. He met Mr. McLaughlin, Mr. Hemphill, and Professor Scoates of the Texas A and M College and together looked over the irrigation and drainage situation in the vicinity of Brownsville, Texas. Mr. McCrory reports that he was pleased with the progress made in that section since his last visit. After leaving Mr. McLaughlin at San Antonio, Mr. McCrory spent a day with Mr. Sutton at Franklin, Louisiana, during which present and future work on the irrigation of sugar cane was discussed with Mr. Sutton, and with Mr. Caffery on whose land these studies are being made. Mr. McCrory then proceeded to Auburn, Alabama; Gainesville, Florida; Clemson College, South Carolina; and Raleigh, North Carolina. At each of these places he conferred with those concerned with agricultural engineering problems. He returned to Washington November 7.

Mr. Sutton reports continued heavy rains which render irrigation of sugar cane unnecessary but which give opportunity for developing the drainage phase of the study.

Probably the outstanding item of interest to report this month is the unusually heavy rainfall that broke the protracted drought in central Mississippi and southeast Arkansas, November 3 - 6. Messrs. Clayton and Simons report a precipitation of from 9 to 11 inches over the watersheds on which they are making run-off investigations, most of which occurred within 36 hours. This precipitation resulted in record stages on some channels. In some cases, unfortunately, the stages exceeded the range of the gage. By dint of wading and using "floating" bridges, Messrs. Clayton and Simons, with their assistants, were able to secure gagings on most of the channels under observation at stages at or nearly maximum. The data secured will form a valuable contribution to information available on the subject of run-off from drained lands in the Mississippi Valley and will serve as a check on the Division's design of the ditches.

Mr. Ramser has completed an inspection trip to the projects in direct charge of Mr. Simons in southeastern Arkansas and Mr. Clayton in central Mississippi. Heavy rains in northeastern Arkansas, in the St. Francis River country, required that he make a trip there in connection with gaging stations established in that area.

Mr. Yarnell, at Iowa City, has started laboratory work on the study of flow around bends. He is using for the purpose a small flume having a 180 degree return bend. The manuscript of the report on flow through culverts, experimental work on which has been occupying his time for the last two years, has been submitted for publication by the University of Iowa.

IRRIGATION

W. W. McLaughlin visited the lower Rio Grande Valley and other points in Texas during the latter part of the month in company with Mr. McCrory, R. G. Hemphill and others. They conferred with the Board of Water Engineers at Austin. Mr. McLaughlin then proceeded to State College, N. M., and conferred with D. W. Bloodgood and with members of the staff in the Experiment Station.

L. T. Jessup measured the drainage run-off through 40 outlets serving an area of over 110 square miles in Yakima Valley, Wash., stating that the run-off from a number of districts appears to be increasing over that which obtained a number of years ago. He made a survey and contour map of an 80-acre orchard showing the irrigation system and location of various kinds of trees.

Harry F. Blaney attended hearings of the Senate Committee on Irrigation and Reclamation at Los Angeles on the Colorado River controversy. The testimony showed that Los Angeles and other southern California cities are in favor of a high dam at or near Boulder Canyon and will cooperate to build an aqueduct from the Colorado River to the Coast for domestic water at a cost of $150,000,000 bonds having already been voted for$2,500,000 for preliminary studies. Mr. Blaney made a trip to Ventura County to investigate a new method of subirrigation. In company with C. A. Taylor, Jr., and S. H. Beckett, he made a tentative selection of orchards in northern San Diego County on which to make duty of water studies.

A. L. Fellows spent the latter part of the month in North Dakota, Montana, and Wyoming, on the Great Plains project. In Montana a conference was held with persons interested in financing both bankrupt and new irrigation projects on a basis which requires that the project on completion (or on re-financing) shall be of such low cost that the farmer will be reasonably sure to succeed; that is be approved in all physical and economic aspects by their own experts, operate as an irrigation district, and employ an engineer satisfactory to the financing company; which company will also provide funds for financing worthy farmers.

R. G. Hemphill reports the receipt of several hundred silt samples from the nine sampling stations in the Brazos drainage of Texas following the end of the long drought that has afflicted that State. In company with Messrs. Faris and Magnuson, he made a survey of Medina Lake to determine the extent of silt deposits. Mr. Hemphill spent some days in the lower Rio Grande Valley gathering information on the irrigation of cotton.

Messrs. Stockwell and Hardman have continued their well tests in Las Vegas Valley, Nevada, under the direction of F. L. Bixby. The wells thus far tested are non-flowing artesian wells, the tests being made to determine whether the wells will stand pumping. It is hoped that the results of those tests will clear up uncertainties regarding the pumping possibilities in southern Nevada.

Wells A. Hutchins spent most of the month in New Mexico continuing the field study of the organization and operation of mutual irrigation companies. In company with Dean W. Bloodgood, he visited a number of community irrigation associations or "acequias" in the Rio Grande drainage, where it is thought that the oldest existing irrigation organizations in the United States are located, several dating back more than 100 years. One of the existing ditches serving the community at Isleta Pueblo was constructed before the coming of the white men under Coronado.

Mr. Bloodgood visited Estancia Valley, New Mexico, where a Purnell project on the use of supplemental water supplies is being started in cooperation with the State Engineer and with several commercial organizations interested in the possibilities of that valley. Late-season field work on the experimental alfalfa plats at State College showed that from a water viewpoint the best duty is still to be found on the shortest (200-foot) plat with the smallest irrigation head (1 second-foot).

R. A. Hart and T. C. Adams continued their study of the required capacity of drains for irrigated land, doing field work on several drainage districts in Utah. The results of a laboratory test of leaching alkaline soil made by Mr. Hart to ascertain the relative effectiveness of the well water used in the original reclamation, as compared to distilled water, indicate that the well water was at all times more effective; that at no time was there any tendency for the soil to "seal" with the well water, which finally occurred with the distilled water; and that having once "sealed" even the well water would not percolate readily through such soil. An interesting phenomenon observed in both tests was that, while the rate of percolation fell off rapidly at first, a marked increase took place later.

Under the direction of L. M. Winsor, a compilation of data covering flood and gravel control investigations has been carried forward and the collection of questionnaires covering ground-water development in Utah has been undertaken.

Carl Rohwer spent some time during the month designing an Improved Venturi Flume for Dye Lake Outlet at Rocky Ford, Colorado.

Paul A. Ewing returned to Berkeley early in October from Washington, where he spent the summer in office work connected with the project on economic limits of cost of water for irrigation. In cooperation with the Bureau of Agricultural Economics, represented by R. P. Teele, reports from nearly 6,000 farms were secured.

James C. Marr made a trip to Twin Falls, Idaho, at the request of Messrs. Ewing and Teele, for the purpose of obtaining facts regarding the history of specialized agriculture, with particular reference to the pro-

duction of beans, clover seed, alfalfa seed, and onions. Mr. Marr made several ground-water surveys on the Helms Tract, on which cooperative alkali reclamation experiments are being conducted, and a topographic survey is now under way to determine the advisability of enlarging the experimental tract and leasing it.

Under the direction of O.V.P. Stout, Frank David and Lloyd Brown are making duty of water investigations in the Sacramento-San Joaquin Delta of California. The means employed in making these field studies differ materially from those in use under ordinary conditions, due to the distinctive methods of irrigation practiced in the islands.

RURAL ENGINEERING

M. C. Betts recently delivered an address before the Acetylene Gas Association in Chicago on the subject "Acetylene on the Farm."

Work has been completed on a bulletin relative to the use of tractors on California farms, based on questionnaires received from tractor owners.

A study has been begun of farm wagon and motor truck equipment.

C. D. Kinsman has prepared a brief report on the distribution of electricity to farms from central stations.

M. A. R. Kelley has resumed the compilation of data relating to the ventilation of barns.

Plans are being prepared for an ice-making room in Center Market, Washington, and of a greenhouse for the Arlington Farm.

SURPLUS WAR EXPLOSIVES

Mr. George R. Boyd has about completed his work in the Pacific Northwest. He has been endeavoring to arouse an interest in educational work in the use of explosives, demonstrating the use of pyrotol, and securing motion pictures of landclearing methods in the Northwest for use in the motion picture reel that is being prepared on the subject of the use of explosives. Movement of pyrotol during the month of October amounted to 1,216,400 pounds for landclearing and 420,500 pounds for Government and road work. This brings the total shipments of pyrotol to November 1, up to 18,154,900 pounds.

PERSONAL

Mr. Grau, property clerk at the Washington Office, is still on the sick list. He is being treated at Walter Reed Hospital, Washington.

PUBLICATIONS AND REPORTS

Farmers' Bulletin 1460, "Simple Plumbing Repairs in the Home," by G. M. Warren is now available for distribution.

Two reports were received at the Berkeley office from A. L. Fellows, entitled "Farm Reservoirs" and "Pumping for Irrigation." These were prepared at the request of the Agricultural Agent of the Rock Island Railroad.